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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,020	11/24/2003	Akira Matsuda	032130	9168

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WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP  
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WASHINGTON, DC 20036

EXAMINER
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LAVILLA, MICHAEL E

ART UNIT	PAPER NUMBER
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1775

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/719,020

Applicant(s)

MATSUDA ET AL.

Examiner

Michael La Villa

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 20,22-27 and 29-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20,22-27 and 29-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5 February 2007 has been entered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
  3. A person shall be entitled to a patent unless –
    4. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
5. Claims 20, 23-25, 27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Atobe JP 59-50190. Atobe teaches a brass plate coated with NiP having 16.5 % by weight of phosphorus. See Atobe (Working Example 3 on pages 4 and 5 of the translation). With respect to Claim 23, it would be expected that the bath pH would be less than 6 in view of the various highly acidic species present.
6. Claims 27, 29, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Rice et al. USPN 4,888,574. Rice teaches a copper foil coated with NiP and

insulating layer. See Rice et al. (col. 2, line 31 through col. 6, line 28). Absent a showing to the contrary, it would be expected that the NiP layer of Rice would be indistinguishable from one formed by the claimed product-by-process limitation.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 20, 22-27, and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rice et al. USPN 4,888,574 in view of Kazonovtse et al. (WPI World Patent Information Derwent, Vol. 29) for the reasons of record in the Office Action mailed on 3 November 2006.

10. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rice et al. USPN 4,888,574 in view of Gales et al. WO 01/63016. Rice teaches a copper

foil coated with NiP and insulating layer. See Rice et al. (col. 2, line 31 through col. 6, line 28). Absent a showing to the contrary, it would be expected that the NiP layer of Rice would be indistinguishable from one formed by the claimed product-by-process limitation. Rice may not teach the claimed Rz value. Gales teaches forming copper foil with claimed Rz value on each side in order to provide a good foil with smooth surface from which an effective circuit board can be fabricated. See Gales et al. (page 5, lines 9-13). It would have been obvious to one of ordinary skill in the art at the time of the invention to fabricate the board of Rice with the foil of Gales, as Rice teaches a method of making a circuit board using generic copper foil and as Gales teaches a specific foil that is effective for making a circuit board.

***Response to Amendment***

11. In view of applicant's amendments and arguments, applicant traverses the section 112, first paragraph rejection of the Office Action mailed on 3 November 2006. Rejection is withdrawn.
12. In view of applicant's amendments and arguments, applicant traverses the section 102 rejection over Kiyokawa of the Office Action mailed on 3 November 2006. Rejection is withdrawn.
13. In view of applicant's amendments and arguments, applicant traverses the section 103 rejection over Rice in view of Kazanovtse of the Office Action mailed on 3 November 2006. Applicant argues that applicant has demonstrated unexpected results by virtue of improved appearance results, which arguably are


evidence of a structural feature absent in the prior art. Applicant's argument is not persuasive since the improved appearance is attributed to different plating solution flow patterns which are not claimed. See Specification (first line of page 19). Applicant has not demonstrated that these different solution flow patterns necessarily arise from the claimed plating bath solution composition, including, particularly, the amount of nickel sulfamate. Rejection is maintained.

14. In view of applicant's amendments and arguments, applicant traverses the section 103 rejection over Atobe of the Office Action mailed on 3 November 2006. Applicant argues that Atobe does not relate to a circuit board. Atobe teaches a brass plate, which can be identified with the claimed "copper foil," and a NiP layer formed by the claimed product-by-process limitation. Applicant has not defined "copper foil" in a manner that precludes encompassing a brass plate. Applicant's claimed "circuit board" is described as constituting a foil and NiP layer, which encompass Atobe's article. In contrast to a conventional circuit board, the claimed circuit board does not necessarily contain an insulating layer since only claim Claim 31 refers to this limitation and does not necessarily contain patterned circuits since Claim 31 only contemplates but does not demand patterned circuits. Although the section 103 rejection over Atobe has been withdrawn, Atobe has been used in new rejections as set forth above.
15. In Claims 20 and 27, applicant has used an unconventional spelling for "aluminum" and may choose to use the conventional spelling.

**Conclusion**

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is (571) 272-1539. The examiner can normally be reached on Monday through Friday.
17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael La Villa  
26 February 2007

  
MICHAEL E. LAVILLA PH.D.  
PRIMARY EXAMINER